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| 10/727,485      | 12/05/2003  | Karel Hajmrle        | T8-467813US         | 2078             |

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| EXAMINER |
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LANG, AMY T

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3731

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/727,485

Applicant(s)

HAJMRLE ET AL.

Examiner

Amy T. Lang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-75 is/are rejected.
- 7) ☒ Claim(s) 53 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 12/22/2006. In particular, claims 27-75. This combination of limitations was not present in the original claims. Thus, the following action is properly made final.

#### ***Claim Objections***

1. **Claim 53** objected to under 37 CFR 1.75 as being a substantial duplicate of claim 51. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 27-43 and 60** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably

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convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, claims 27, 38, 42, and 60 all recite classifying the dry agglomerates into size by into an undersize particle fraction, an onsize particle fraction, and an oversize particle fraction. However, it is the examiner's position that the instant specification does not support the limitation of obtaining an onsize particle size fraction (see page 8, lines 21-22). Claims 28-37, 39-41, and 43 are dependent from claim 27.

4. **Claim 73** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 73 recites wherein the solid lubricant is spheroidal. However, it is the examiner's position that while the specification supports a broadly disclosed rounded shape, the specification does not support the claimed spheroidal shape since it is narrower in scope.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 44, 45, 47, 54-56, 72, 74, and 75** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heath (US 3,051,586) in view of Dorfman (US 5,122,182) and Reidmeyer (US 6,432,886 B1).

US '586 discloses a lubricant in the form of a coating or film applied by spraying (column 1, lines 10-13; column 3, lines 1-14). The lubricant is comprised of organic or inorganic binders and solid lubricants including graphite, molybdenum disulfide, boron nitride, and tungsten disulfide (column 1, lines 16-20; column 3, lines 18-33). The total amount of solid lubricant particles in the composition is disclosed as 80 parts by wt (Example 2, column 5). The total amount of resin binder is disclosed as 101.2 parts by wt (Example 2, column 5). Therefore the ratio of solid lubricant particles to binder is 0.79 (=80/101.2), which clearly overlaps the instant range of 19:1 to 1:19. Since US '586 discloses the use of either an organic or inorganic binder, and furthermore since the reference does not constrain the amount of inorganic binder to any particular value, it would have been obvious to use an inorganic binder in the same amount as the organic resin binder absent evidence to the contrary.

By adding 80 parts by wt of solid lubricant in a mixture comprised of a total of 1034.3 parts by wt, the amount of solid lubricant in the total mixture is 7.73% (Example 2, column 5). Therefore, the composition contains from 5 to 60 wt% solids.

US '586 discloses the addition of other components to the composition including a wetting agent and zinc chromate powder, where either one would act as a filler (Example 2, column 5). These components are also added in amounts less than 40 volume% of the solids, which clearly overlaps the instant claims.

US '586 discloses, in the method to produce the lubricant composition, the addition of water to the binder and solid lubricant mixture (column 3, lines 11-14). The mixture is then milled to a desired particle size cut.

US '586 is silent as to the specific method to mill the mixture.

US '182 also discloses a composition utilized for spraying a coating (column 1, lines 10-14). The composition is also comprised of a mixture of a binder, solid lubricants including molybdenum disulfide, graphite, and calcium fluoride, and water (column 1, lines 55-57; column 2, lines 33-36; column 6, lines 4-8, 26-27). The mixture is milled in a conventional process disclosed by first forming an aqueous slurry and then drying droplets to produce particles. The particle agglomerates are then classified to obtain a desired size (column 3, line 48 through column 4, line 16). This process would inherently produce an undersize and oversize particle fraction, where both are dispersed in the original liquid. US '182 discloses that the above process is useful and conventional (column 3, lines 48-58). In view of that, it would therefore have been obvious to utilize this same process in US '586.

Although US '586 is open to various binders (column 2, lines 27-30), US '586 does not specifically disclose the binder as non-dispersible.

US '886 also discloses a lubricating composition comprised of solid lubricants, including graphite, and a binder (column 1, lines 7-11; column 4, line 61). The solid lubricants are also in an agglomerated form and the binder is further disclosed as sodium silicate (column 2, lines 38-41; column 5, lines 7-9). This disclosed composition produces a stable and consistent lubricant due to its structural integrity (column 5, line 62 through column 6, line 5). In view of the advantage provided by the use of sodium silicate binder, it therefore would have been obvious to use sodium silicate as the inorganic binder in US '586.

8. **Claims 48, 49, and 52** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heath (US 3,051,586) in view of Dorfman (US 5,122,182), Reidmeyer (US 6,432,886 B1), and Dorfman (US 5,506,055).

US '586 in view of US '182 and US '886 as discussed in paragraph 7 are incorporated here by reference, disclose a method to produce a spraying composition comprised of a mixture of a binder, solid lubricant including boron nitride, and water.

US '586 does not specifically disclose the solid lubricant as hexagonal boron nitride.

US '055 also discloses a spray composition comprised of solid lubricants, including boron nitride (column 2, lines 40-42; column 3, lines 11-12). The boron nitride is further disclosed as hexagonal boron nitride and the produced spray composition is

shown to provide improved abrasability while still maintaining erosion resistance (column 2, lines 42-45; column 3, lines 11-20). In view of the advantage provided by the solid lubricant hexagonal boron nitride, it therefore would have been obvious to also utilize hexagonal boron nitride as the solid lubricant in US '586.

9. **Claims 51, 53, 57-59, 61, 63, and 67-70** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heath (US 3,051,586) in view of Dorfman (US 5,122,182), Reidmeyer (US 6,432,886 B1), Dorfman (US 5,506,055), and Lum (US 5,468,401).

US '586 in view of US '182, US '886, and US '055 as discussed in paragraph 8 are incorporated here by reference, disclose a method to produce a spraying composition comprised of a mixture of a binder, solid lubricant, and water.

US '586 does not specifically disclose the inorganic binder as bentonite.

US '401 discloses a lubricating composition that is utilized as a spray composition (column 1, lines 14-16, 58-59). The composition is comprised of solid lubricants and binders, specifically bentonite (column 7, lines 36-39; column 19, line 65 through column 20, line 6). The binder effectively adheres the agglomerated lubricant particles and would inherently be stabilized above 850 degrees Celsius (column 19, lines 65-67). In view of the advantage provided by the use of bentonite binder, it therefore would have been obvious to use bentonite as the inorganic binder in US '586.



10. **Claims 44, 46, 48, 50, 57, 62, 64-66, 72, 74, and 75** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 4,039,337) in view of Dorfman (US 5,506,055).

US '337 discloses a lubricating coating composition comprised of an aqueous mixture of solid lubricants including graphite, boron nitride, and tungsten disulfide and a silicate binder (column 2, lines 45-65). The amount of solid lubricant is disclosed from 5 to 70 wt%, while the binder is disclosed from 10 to 40 wt% (column 3, lines 16-19, 35-38). Therefore, the ratio of solid lubricant to binder clearly overlaps the instantly claimed range of 8:2. The total amount of solid lubricant in the composition is disclosed as 25.4 wt%, so that 5 to 60 wt% solids are present in the composition (Example 1, column 5).

Furthermore, US '337 discloses additional components in the composition including thixotropic agents, which inherently act as fillers (column 4, lines 57-59). These fillers are in an amount less than 40 volume% of the solid lubricants (Example 1, column 5).

US '337 teaches the composition as bound to a metal by a spraying process (Example III, column 6). However, US '337 is silent as to the specific method for producing the mixture.

US '055 also discloses a coating composition comprised of a mixture of solid lubricants and binder (column 2, lines 40-54; column 3, lines 24-25). The composition is produced by conventional methods that include stirring the mixture to produce a slurry and then drying the composition until agglomerates are formed (column 3, lines 20-39).

The method disclosed by US '055 teaches blending a mixture of fine powder constituents (column 3, lines 25-26). Therefore, the particles were inherently sized to a desired size and an oversized and undersized fraction would be produced. These fractions would have then been blended, as taught by US '055, and would inherently be non-dispersible in the original liquid.

US '337 is also silent as to the use of hexagonal boron nitride for the solid lubricant.

US '055 also discloses the use of boron nitride in the coating composition as the solid lubricant (column 2, lines 40-42; column 3, lines 11-12). The boron nitride is further disclosed as hexagonal boron nitride and the produced composition is shown to provide improved abrasability while still maintaining erosion resistance (column 2, lines 42-45; column 3, lines 11-20). In view of the advantage provided by the use of hexagonal boron nitride, it therefore would have been obvious to use hexagonal boron nitride as the solid lubricant in US '337.

11. **Claim 71** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 4,039,337) in view of Dorfman (US 5,506,055) and Reidmeyer (US 6,432,886 B1).

US '337 in view of US '055, as discussed in paragraph 10 are incorporated here by reference, disclose a method to produce a spraying composition comprised of a mixture of a binder, solid lubricant, and water.

US '337 does not specifically disclose the binder as sodium silicate.

US '886 also discloses a lubricating composition comprised of solid lubricants, including graphite, and a binder (column 1, lines 7-11; column 4, line 61). The solid lubricants are also in an agglomerated form and the binder is further disclosed as sodium silicate (column 2, lines 38-41; column 5, lines 7-9). This disclosed composition produces a stable and consistent lubricant due to its structural integrity (column 5, line 62 through column 6, line 5). In view of the advantage provided by the use of sodium silicate binder, it therefore would have been obvious to use sodium silicate as the inorganic binder in US '337.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy Lang whose telephone number is (571) 272-9057.

The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anhtuan Nguyen can be reached on (571) 272-4963. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/30/2007  
Amy T. Lang

ATL

  
ANH TUAN T. NGUYEN  
SUPERVISORY PATENT EXAMINER  
